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ASSESSMENT TOOL FOR LABORATORY SERVICES (ATLAS) 2006

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DELIVER
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ASSESSMENT TOOL FOR LABORATORY SERVICES (ATLAS) 2006

DELIVER

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Implemented by John Snow, Inc. (JSI), (contract no. HRN-C-00-00-00010-00) and subcontractors (Manoff Group, Program for Appropriate Technology in Health [PATH], and Social Sectors Development Strategies, Inc.), DELIVER strengthens the supply chains of health and family planning programs in developing countries to ensure the availability of critical health products for customers. DELIVER also provides technical management of USAID's central contraceptive management information system.

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Abstract

The *Assessment Tool for Laboratory Services (ATLAS) 2006* is a data gathering tool developed by the DELIVER project to assess laboratory services and logistics. The ATLAS is a diagnostic and monitoring tool that can be used as a baseline survey to complete an annual assessment or as an integral part of the work planning process. The ATLAS is primarily a quantitative tool with a small sample qualitative facility survey of available commodities and equipment. The information collected using the ATLAS is analyzed to identify issues and opportunities, and to outline further assessment and/or appropriate interventions.

The ATLAS is used to analyze the entire laboratory system. It includes three questionnaires: central administrative level, intermediate administrative level, and the facility (laboratory) level.

Assessments using the ATLAS can be conducted and analyzed in successive years. The results can contribute to the monitoring, improvement, and sustainability of laboratory performance; and to provide critical non-logistics data that can identify a country's laboratory systems strengths and weaknesses.

DELIVER would like to thank the AIDS/HIV Integrated Model District Programme (AIM) for their guidance on the infrastructure and inspection sections of the tool.

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Acronyms

AFB	acid-fast bacilli
AIM	AIDS/HIV Integrated Model District Program
AMREF	African Medical Research Foundation
CSF	colony-stimulating factor
ELISA	enzyme-linked immunosorbent assay
Hb	hemoglobin
HC	health center
HIV/AIDS	human immunodeficiency virus/acquired immune deficiency syndrome
HIV RNA	human immunodeficiency virus ribonucleic acid (HIV virus)
KOH	potassium hydroxide
LIAT	Logistics Indicators Assessment Tool
LSAT	Logistics System Assessment Tool
MOF	Ministry of Finance
MOH	Ministry of Health
PCR	polymerase chain reaction
RPR	rapid plasma reagent
RT	reverse transcriptase
SGOT	serum glutamic oxaloacetic transaminase
SGPT	serum glutamic pyruvic transaminase
SOP	standard operating procedure
STI	sexually transmitted infection
TB	tuberculosis
TPHA	treponema pallidum haemagglutination assay
TSI	triple sugar iron
VDRL	venereal disease research laboratory slide test
ZN stain	Ziehl-Neelson stain

Acknowledgments

This paper, which is a component of the CD, *Resources for Managing the Laboratory Supply Chain*, is dedicated to people around the world living with HIV/AIDS and to the many individuals from communities, nongovernmental organizations (NGOs), faith-based organizations, Ministries of Health, and other organizations who have consistently fought for access to antiretroviral drugs and other commodities required to provide HIV/AIDS services. The CD is also dedicated to friends and counterparts who have worked with DELIVER, the Family Planning Logistics Management project, and John Snow, Inc., since 1986 and to the thousands of committed professionals in Ministries of Health and NGOs who work daily to supply their customers and programs with essential public health commodities. Although the resources provide a focus on specific HIV/AIDS and laboratory commodities, we recognize that comprehensive HIV/AIDS and laboratory programs require the supply chain to manage and deliver a broad range of several hundred public health commodities.

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Assessment Tool for Laboratory Services Users Guide (ATLAS)

Background and Intended Use

The Assessment Tool for Laboratory Services (ATLAS) is a data gathering tool developed by the DELIVER project to assess laboratory services and logistics. The ATLAS, a diagnostic and monitoring tool, can be used for a baseline survey to complete an annual assessment or as an integral part of the work planning process. The information collected using the ATLAS is analyzed to identify issues and opportunities, and to outline further assessment and/or appropriate interventions.

Assessments using the ATLAS can be conducted and analyzed in successive years, and the results can contribute to the monitoring, improving, and sustaining of laboratory performance; and to provide critical non-logistics data that identify a country's laboratory systems strengths and weaknesses.

Benefits

The ATLAS can—

- Provide
  - stakeholders with a comprehensive view of all aspects of the laboratory services
  - a snapshot of testing capabilities and commodity availability at laboratories throughout the system
  - input for work planning.
- Be used
  - as a diagnostic tool to identify issues and opportunities for each individual laboratory in a given country
  - by country personnel as a monitoring tool (to learn and continually improve performance).
- Raise collective awareness and ownership of laboratory services performance and goals for improvement.

Overall Process

Assessment period/cycle

The ATLAS can be conducted at any time as a baseline assessment or at a time agreed upon within selected countries. Ideally, the ATLAS should be conducted within the three-month period prior to work planning or strategic planning exercises.

Data collection

The ATLAS contains three questionnaires:

- Central administrative level
- Intermediate administrative level (if applicable)
- Facility (laboratory) level.

The three questionnaires need to be adapted for the in-country system. The intermediate administrative level questionnaire focuses on decentralized logistics functions. In a highly decentralized system, this questionnaire will need to be adapted. See *Adapting the ATLAS*.

This structure allows different methods to be used for each questionnaire. In general, three methods are recommended for data collection:

- Discussion groups can be conducted at the central level with officials at that level only (using the central administrative level questionnaire) or with representatives of both the central and intermediate levels (using both central and intermediate administrative level questionnaires). Discussion groups can also be conducted separately at the intermediate level (using the intermediate administrative level questionnaire).
- The ATLAS can be used as a guide when conducting key informant interviews at the central and intermediate levels. If key informant interviews are used, it may be necessary to interview multiple people with varying degrees of knowledge of the system to complete the questionnaire. All key informant interviews should be consolidated and the answers should be reconciled.
- Field visits are the preferred method to use with the facility level assessment. These visits are necessary to evaluate the infrastructure, storage conditions, and the availability and status of equipment and supplies.

To have a complete assessment, it is highly recommended that the ATLAS be used for a group discussion at the central level (and intermediate level, if applicable) and for field visits at the facility level.

Data analysis and work plan development should take place immediately following data collection. To develop and prioritize a set of objectives and interventions that are designed to address issues raised through the assessment, this process should include a thorough review of strengths and weaknesses.

Learning and performance improvement

The ATLAS provides a comprehensive overview, particularly at the facility level. The baseline data it provides can facilitate performance and process improvement. However, the repeat use of the ATLAS depends upon the outcomes after the interventions are implemented. It is preferable to wait for interventions to take place before repeating the ATLAS.

Planning for the ATLAS

Preparatory research

Some aspects of the ATLAS should be researched in advance of the group discussion and field visits. The general levels of the system should be identified (i.e., whether the country uses regional, zonal, or provincial). The evaluation team should also know whether some keys functions are decentralized; in many countries, key policy and logistics decisions are made at an intermediate administrative level (e.g., the district or the regional office). In this case, the intermediate administrative level questionnaire will need to be adapted to reflect the different responsibilities at each level. See *Adapting the ATLAS* for more information.

Additionally, the evaluation team should try (if possible) to collect all policy and guideline documents prior to the interviews. These documents can help guide the discussion.

Choosing the data collection method

Talk with the program managers or country counterparts and agree upon the approach to be used.

Small discussion groups are preferable for the central and intermediate level questionnaires. These groups may require a few hours to gain the breadth and depth of data required and to provide adequate opportunity for full participation.

If the assessment is intended to develop strategies for systemic interventions (e.g., design a logistics system for laboratory supplies), field visits to sample facilities should be included and planned. Before drawing the sample, all parties should agree to the criteria for selecting the facilities. A sampling frame that includes the complete list of facilities to be assessed will be required. The list should be stratified by region/province, facility type, and urban-rural, as appropriate. Ideally, the sample size should be allocated proportionally within each stratum (i.e., region/province, facility type, urban-rural, etc.). A stratified sampling will provide more precision than a random sampling. The sample size should be determined based on standard statistical formulas.

In case of resource constraints, visit a default number of a minimum of 100 facilities[1]. Fewer facilities may be considered for cross-sectional rapid assessments or qualitative studies, but are not ideal to measure (statistically) significant changes over time. In some cases, to avoid extensive traveling, two-stage sampling may also be considered. In the first-stage, the administrative areas (e.g., region, province, district, etc.) are randomly selected, followed by selection of the facilities during the second stage.

If the plan is to provide information for the development and implementation of interventions specifically for each facility, then a countrywide assessment plan should be developed and a visit to each laboratory facility considered for the intervention.

A combination of discussion groups (and key informant interviews, if appropriate) for the central and intermediate levels questionnaires, and field visits for the facility level questionnaire are the preferred approach to be used for conducting an ATLAS.

After the data collection is completed, a joint discussion group that includes representatives from all levels and all programs (e.g., laboratory services, tuberculosis, and leprosy control, HIV/AIDS, malaria, etc.) should be organized to reconcile findings and develop a work plan.

Number and qualifications of data collectors

It is important that the same data collectors are available for both the group sessions and field visits. Because many laboratories have limited space and no facilities for visitors, it is important to give careful consideration to the number and the skill set of the data collectors. The evaluation teams should usually not exceed four members during a field visit. Each evaluation team should include at least one interviewer with laboratory experience who can understand and interpret the terminology specific to laboratories and at least one interviewer with experience assessing and designing logistics systems.

Selecting interviewees

a. Central level

To obtain accurate data about the functioning of each aspect of laboratory services, it is very important to have the right set of people.

[1] For detail on sample size estimation see *Sampling Manual for Facility Surveys for Population, Maternal Health, Child Health and STD Programs in Developing Countries*. MEASURE Evaluation Manual Series, No. 3. MEASURE Evaluation. Carolina Population Center, University of North Carolina at Chapel Hill. July 2001. The manual is available at: http://www.cpc.unc.edu/measure/publications/pdf/ms-01-03.pdf

At the central level, it is critical to identify the division or unit that is responsible for managing laboratory services in a specific country. Representatives from the senior management of that unit are the most appropriate interviewees for this level. In addition, representatives from programs that require testing services (e.g., HIV/AIDS, TB, STI, malaria, etc.), the division responsible for forecasting/procurement (e.g., Ministry of Finance or pharmacy division at the Ministry of Health [MOH]), and the senior stores officer from the supplying facilities (such as the central medical stores) should be part of the central level questionnaire.

b. Intermediate level

As explained earlier, the intermediate level questionnaire collects data on management level issues, similar to the central level, but, specifically, for a decentralized setting. Members of the district or regional level management team are usually appropriate. These management teams include, among others, district or regional medical officers in charge, head financial officers, chief pharmacists, chief laboratory technologists, medical superintendents, and, in some cases, representatives from the community.

c. Facility level

The laboratory technologist in charge is the correct person to interview. In her or his absence, the most senior laboratory technologist (or technician) can be interviewed. Any of the technical staff in the laboratory should be able to answer most of the questions in the facility level section of the tool. It is important to remember that this step includes an extensive inspection of the laboratory supplies storage area, infrastructure, and equipment. Therefore, a knowledgeable technician should be interviewed.

Table 1 shows the required knowledge areas for the interviewees, by level.

Table 1: Required Knowledge Areas of Participants, by Level

Knowledge Area	Central Level	Intermediate Level	Facility Level
National Laboratory System Organization	X	X	
National Policies	X	X	X
Forecasting and Procurement	X	X	
Financing	X	X	
Storage and Distribution	X	X	X
Inventory Management	X	X	X
Laboratory Management Information System	X	X	X
Laboratory LMIS	X	X	X
Supervision	X	X	X
Laboratory Personnel	X	X	X
Laboratory Testing Services			X
Testing for Quality Assurance	X	X	X
Equipment Availability and Maintenance			X
Supply Availability			X
Laboratory Infrastructure			X

Planning field visits

Field visits should be made after the discussion sessions/interviews with the central level because the facility level tool will need to be customized for this program or country. It is recommended that the interviewers make field visits with appropriate stakeholders, if

possible. All field visits should be scheduled ahead of time to ensure that the appropriate staff member will be available.

Field visits offer an opportunity to explore the issues identified during the discussions/interviews, enhance the quality of the information gathered, and allow for additional data collection. Those making the field visits need to focus on unanswered ATLAS central or ATLAS intermediate questions; mixed, unsure, or contested data; and disparate or wide-ranging responses to questions. They should also take a more in-depth look at the particular areas of the lab. Program managers and/or country counterparts can help plan the appropriate number of visits.

Adapting the ATLAS

Prior to any interviews or field visits, the evaluation team should adapt all of the questionnaires to reflect the appropriate levels in the system for which these tools will be used. For example, the name of the intermediate level could be regional, zonal, or provincial. The correct titles should be used for each of questionnaires. Following are some specific adaptations that should be considered for each of the three questionnaires.

a. Central administrative level questionnaire

If the evaluation team is able to obtain the policy documents prior to the central level discussion, the answers should be incorporated into the questionnaire and verified during the interview(s). Many of the answers in this questionnaire will be used to adapt the other two questionnaires.

Note: If the system is decentralized, many of the questions from this questionnaire will need to be asked at the intermediate administrative level.

The following questions will need to be adapted to reflect the correct levels in the system:

- section V, question 7
- section VIII, question 1
- section VIII, question 2.

b. Intermediate administrative level questionnaire

Depending on the level of decentralization, this questionnaire will need to be adapted to reflect the areas for which the intermediate administrative level is responsible. Additionally, any questions that were answered by the central level with regards to policy will need to be considered. If there are no set national guidelines or protocols, section II will need to be adapted.

The following questions will need to be adapted to reflect the correct levels in the system:

- section VIII, question 1
- section VIII, question 2.

c. Facility level questionnaire

Any policy questions that were answered by the central level will need to be considered. If there are no set national guidelines or protocols, section I will need to be adapted.

Section III will need to be adapted to reflect the approved testing techniques by level. If this is not standardized for the country, the evaluation team will need to work with the central

level decision makers to identify a standard list of the techniques that should be performed at each level of the system.

Section V will need to be adapted to reflect the approved equipment that should be available for each level. If this is not available in a national policy and/or guideline document, the evaluation team will need to work with the central level decision makers to identify a standard list of equipment that should be available at each level of the system.

Section VI, subsection E (availability of sample reagents and infection control commodities) is a short sample survey of laboratory commodities. This list should remain a manageable size and should be determined with the central level decision makers to determine which reagents and commodities will reflect commodity availability.

Section VII (laboratory infrastructure and inspecting the laboratory area) will need to be adapted to reflect any country-specific guidelines about work area regulations. These areas should be reviewed and approved by the central level decision makers.

The following questions will need to be adapted to reflect the correct levels in the system:

- section III, question 1
- section III, question 2
- section III, question 3
- section V
- section VI, subsection E
- section VII.

Data Encoding and Analysis

Following data collection, the completed response to the central, intermediate and the facility-level questionnaires should be entered into a database. To ensure the quality of the data collected, the completed questionnaires should first be examined for omissions and errors. Qualitative responses to open ended questions should be coded, if possible, before entering the data.

Before conducting data analysis, the analysis plan should be outlined according to the survey objectives. Ideally, the data should be entered using a software (e.g., Access, Epi Info[2], SPSS, etc.) which allows monitoring of the data entry quality. Tables and graphs should be used to present the results. If the number of facilities from which data were obtained are limited (i.e., less than 20), the data can be entered and analyzed using a spreadsheet.

Analysis of the Collected Information

The information collected through the ATLAS can be used as baseline data, as part of an annual assessment, and/or as part of the work planning process. These are discussed separately below.

If the ATLAS is being used to gain baseline information, policymakers can use the data collected to plan for initial interventions in the national laboratory system. This could include

[2] Epi Info is the most widely used software for capturing survey data in developing country settings. The software is available for free from the Centers for Disease Control and Prevention (CDC) website. Epi Info can be learned from the manual and tutorial provided with the software.

identifying problem areas, identifying strengths and weaknesses of the current system, and identifying laboratories for intervention.

When the ATLAS is used as part of an annual assessment, the data from the ATLAS can be used to monitor results from previous interventions.

To inform the work planning process, users can review strengths and weaknesses of the laboratory system, and can use the information to develop appropriate objectives and interventions as part of an effective work plan. This can be especially helpful with the development of strategic laboratory policies, as well as the functioning of the laboratory logistics system.

Conclusion

The ATLAS provides policymakers and stakeholders with a comprehensive view of the laboratory services provided in a specific country. This tool can assist in identifying opportunities for interventions in individual laboratories, as well as raise the awareness of laboratory services provision in the country. The ATLAS can be used for advocacy, monitoring, and planning laboratory programs.

ATLAS—Central Administrative Level

2005

Central Administrative Level Questionnaire

Country name:_____

Program name(s):_____

1. Name of interviewer:	
2. Date:	
3. Name and title of person being interviewed:	
4. Name of department:	
5. Physical and postal address:	
6. Telephone:	

I. Organization

1. How are the laboratories organized? Describe all levels of the program and the relationships between the levels. Attach an organizational chart (include documents that define responsibilities and services provided at each level).	
2. How many laboratories does the MOH/this program manage at each level?	
3. Are all laboratory supplies managed (reporting, ordering, distribution, and storage) through one system or through multiple systems (e.g., TB, HIV/AIDS, essential medical supplies)? List all the systems currently operating in the country.	
4. Are duplicate supplies (reagents and consumables) and equipment distributed through multiple programs? Describe.	
5. Is there a laboratory unit/division/committee operating that coordinates vertical laboratory activities in the country?	❒ Yes (*specify*)_____ ❒ No ❒ Don't know/not sure

Comments:

II. Policy

1. Is a unit responsible for formulating national policies on laboratory services?	❒ Yes (*specify*)_____ ❒ No ❒ Don't know/not sure
2. Is there a national policy document for laboratory services?	❒ Yes ❒ No (go to Q. 6) ❒ Don't know/not sure (go to Q. 6)
3. What areas are covered in this policy document (e.g., staffing by level, administrative protocol, product selection, procurement, etc.)?	
4. Does the policy document include the process of evaluating and approving reagents for disease screening tests (HIV, hepatitis, STIs)?	❒ Yes (*specify*)_____ _____ _____ ❒ No ❒ Don't know/not sure
5. Does the policy document include the following:	
a. Laboratory services packages by level?	❒ Yes ❒ No ❒ Don't know/not sure
b. Laboratory test techniques by level?	❒ Yes ❒ No ❒ Don't know/not sure
Please provide a copy of any policy documents.	
6. Are there documented standard operating procedures (SOP) for tests performed at each level?	❒ Yes ❒ No (go to Q.9) ❒ Don't know/not sure (go to Q.9)
7. Does the SOP provide a list of essential supplies (reagents and consumables) by level?	❒ Yes ❒ No ❒ Don't know/not sure
8. Does the SOP provide a list of essential equipment by level?	❒ Yes ❒ No ❒ Don't know/not sure

Please provide a copy of the SOP manual.	
9. Are there written guidelines on safety precautions? *(Check all that apply.)*	❒ Infection prevention ❒ Safe disposal of sharps (i.e., needles, etc.) ❒ Safe disposal of biohazardous medical waste ❒ Use of protective gear ❒ Other (*specify*)_____ ❒ None available
10. Are there written guidelines for post-exposure prophylaxis for HIV?	❒ Yes ❒ No ❒ Don't know/not sure
11. Are there written guidelines for post-exposure prophylaxis for hepatitis B?	❒ Yes ❒ No ❒ Don't know/not sure
12. Are there written guidelines for disposal or destruction of damaged and/or expired products?	❒ Yes ❒ No ❒ Don't know/not sure
13. Are there written national laboratory procedures for quality assurance?	❒ Yes ❒ No ❒ Don't know/not sure
a. Are procedures for internal quality assurance included?	❒ Yes ❒ No ❒ Don't know/not sure
b. Are procedures for external quality assurance included?	❒ Yes ❒ No ❒ Don't know/not sure
14. Is the automated equipment for hematology, immunology, and chemistry standardized in the country? (*Specify for each.*)	

Comments:

III. Forecasting and Procurement

1. Are forecasts made for needed laboratory supplies (reagents and consumables) for all programs?	❒ Yes ❒ No ❒ Don't know/not sure

2. List programs where forecasts are prepared, how often each forecast is prepared, the title of the person or division responsible, and the information used to forecast laboratory supply needs.

Program	Frequency	Title of Person Responsible	Information Used

3. List programs where forecasts are not prepared.

4. Are there national procurement guidelines for:

a. Laboratory supplies (reagents and consumables)?	❒ Yes ❒ No ❒ Don't know/not sure
b. Laboratory equipment?	❒ Yes ❒ No ❒ Don't know/not sure

5. Describe the procurement process for the national level. (*Specify any differences by program and/or donor.*)	
6. What is the average lead time for each program and/or donor specified above.	
7. Is a person or division responsible for:	
a. Procuring laboratory supplies (reagents and consumables) and equipment? (*Specify by program.*)	
b. Monitoring the procurement process? (*Specify by program.*)	
c. Coordinating procurements across programs? (*specify*)	
8. Who is currently responsible for procuring laboratory supplies for each program?	
9. In general, are adequate amounts of all laboratory supplies received in an appropriate time frame? (*Specify any program differences.*)	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

IV. Financing

1. What are the sources of funds for laboratory services, including infrastructure, supplies (reagents and consumables), and equipment. What percentage of total funding is contributed by each source:	
a. Government?	_____ % of total funding
b. User's fees/cost recovery?	_____ % of total funding
c. Donors (list by donor)? Donor 1:_____	_____% of total funding
Donor 2:_____	_____% of total funding
Donor 3:_____	_____% of total funding
d. Other? (*specify*)_____	_____% of total funding
2. Are funds sufficient to cover the needed supplies and equipment? If not, what is the gap?	❒ Yes ❒ No (*specify amount*)_____ ❒ Don't know/not sure
3. Does a committee or division coordinate the different sources of funds?	❒ Yes (*specify*)_____ ❒ No ❒ Don't know/not sure
4. How are financial resources allocated to laboratories? Describe all levels of the program and the relationship between the levels. Attach a financial organizational chart. (*Specify what financial decisions are made at each level.*)	
5. Is there a separate budgetary line item for laboratory services?	❒ Yes ❒ No ❒ Don't know/not sure

6. Is there a separate budgetary line item for laboratory supplies (reagents and consumables)?	❒ Yes ❒ No ❒ Don't know/not sure
7. Is there a separate budgetary line item for laboratory equipment?	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

V. Storage and Distribution

1. Is there a central level store for laboratory supplies and equipment? (*Specify by program.*)	
2. Is the existing storage capacity adequate to handle the current quantities of laboratory supplies at the national level?	❒ Yes ❒ No ❒ Don't know/not sure
3. Is the existing cold storage capacity adequate to handle the current quantities of cold chain reagents at the national level?	❒ Yes ❒ No ❒ Don't know/not sure
4. Is the existing storage capacity (including cold chain) adequate to handle the expanded program goals for the next three years?	❒ Yes ❒ No ❒ Don't know/not sure
If no, specify what is inadequate. _____ _____	
5. Is there an established distribution system for laboratory supplies and equipment for all levels?	❒ Yes ❒ No ❒ Don't know/not sure
6. Describe the current system for distributing laboratory supplies (reagents and consumables) and equipment to all levels:	

7. Are a sufficient number of functioning vehicles available to meet the distribution schedule at the following levels:	
a. Central?	❒ Yes ❒ No ❒ Don't know/not sure
b. Regional?	❒ Yes ❒ No ❒ Don't know/not sure
c. District?	❒ Yes ❒ No ❒ Don't know/not sure
d. Health centers?	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

VI. Inventory Control System

1. Do laboratories at all levels have a set minimum stock level for reagents and consumables at which orders need to be placed?	❒ Yes ❒ No ❒ Don't know/not sure
2. Do laboratories at all levels have a set maximum stock level for reagents and consumables above which the inventory level should not go?	❒ Yes ❒ No ❒ Don't know/not sure
3. Who determines how much to order?	❒ Laboratory ❒ Higher-level authorities ❒ Other (*specify*): _____
4. What are the order intervals between the different levels in the system?	
5. Are stock balances at all levels monitored regularly so that procurement decisions and actions can be made on time to avoid stockouts? (*Specify any program differences.*)	
6. Does the higher/intermediate level need to reconstitute some stains so they are ready-to-use at the lower levels?	❒ Yes ❒ No ❒ Don't know/not sure
If yes to question 6, specify why: ❒ Lack of technical expertise ❒ Lack of weighing balances Other (*specify*)_____	

Comments:

VII. Laboratory Services Management Information System

1. Is there a laboratory services management information system?	❒ Yes ❒ No ❒ Don't know/not sure
2. Are standard national forms available and used to collect and report laboratory services management information?	❒ Yes ❒ No ❒ Don't know/not sure
3. Do the forms include the following data:	
a. Service statistics? (*specify*) _____ _____ _____	❒ Yes ❒ No ❒ Don't know/not sure
b. Logistics data? (*specify*) _____ _____ _____	❒ Yes ❒ No ❒ Don't know/not sure
c. Laboratory test requested and/or conducted?_____ _____ _____	❒ Yes ❒ No ❒ Don't know/not sure
d. Other data? (*specify*) _____ _____ _____	❒ Yes ❒ No ❒ Don't know/not sure
4. Is any other system used to collect any of the above data items?	❒ Yes (*Specify type of data and system to collect it.*) _____ ❒ No ❒ Don't know/not sure
5. Is there a reporting system for data collected?	❒ Yes ❒ No (go to Q.8) ❒ Don't know/not sure (go to Q.8)
6. Describe the reporting system in detail, including the reporting level, the information reported, and the reporting frequency (monthly, bimonthly, quarterly).	

7. Is this system integrated with the MOH health information system?	❒ Yes ❒ No ❒ Don't know/not sure
8. Are the following data items for laboratory supplies (reagents and consumables) included in reports?	
a. Stock on hand?	❒ Yes ❒ No ❒ Don't know/not sure
b. Consumption (amount used)?	❒ Yes ❒ No ❒ Don't know/not sure
c. Losses and adjustments (stock damaged, lost, transferred, etc.)?	❒ Yes ❒ No ❒ Don't know/not sure
9. Approximately what percentage of districts/laboratories sends these reports each reporting period, according to the schedule?	_____ % of districts _____% of laboratories ❒ Don't know/not sure
10. How do managers monitor reporting rates and follow up to obtain missing reports?	
11. What decisions are based on information received in reports?	
❒ Forecasting/quantification	❒ Monitoring of stock balances
❒ Procurement	❒ Resupply quantities
❒ Transport/delivery	❒ Other (*specify*) _____

Comments:

VIII. Supervision

1. Is scheduled laboratory supervision available at the following levels:	
a. National laboratories?	❒ Yes ❒ No
b. Regional laboratories?	❒ Yes ❒ No
c. District laboratories?	❒ Yes ❒ No
d. Health center laboratories?	❒ Yes ❒ No
e. Private sector laboratories?	❒ Yes ❒ No
2. How often are supervisory visits conducted?	
a. National laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
b. Regional laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
c. District laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
d. Health center laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
e. Private sector laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
3. What activities are routinely done during the supervisory visit? Is there a standard supervision checklist or protocol? If yes, please provide a copy.	
4. Is there a mechanism to monitor the performance of the supply chain for laboratory reagents and consumables? If so, please describe.	

Comments:

IX. General Questions

1. What are the major areas of concern for laboratory services at the national level?
2. How can these areas of concern be addressed nationally?

ATLAS—Intermediate Administrative Level

2005

Intermediate Administrative Level Questionnaire

General Information

1. Name of the district:	
2. Name of interviewer:	
3. Date:	
4. Name, qualification, and title of person being interviewed:	
5. Physical and postal address:	
6. Telephone:	
General notes:	

I. Organization

1. How many government and private not-for-profit laboratories are in the district? Number of governmental labs:_____ Number of not-for-profit labs:_____
2. How many the laboratories are currently functioning (have at least one laboratory staff and basic equipment and supplies)? Number of governmental labs:_____ Number of not-for-profit labs:_____

Comments:

II. Policy

1. Does the district have national guidelines and protocols for laboratory procedures?	❒ Yes ❒ No ❒ Don't know/not sure
2. Does the district have written guidelines on safety precautions available? *(Check all that apply.)*	❒ Infection prevention ❒ Safe disposal of sharps (i.e., needles, etc.) ❒ Safe disposal of biohazardous medical waste ❒ Use of protective gear ❒ Other (*specify*)_____ ❒ None available
3. Does the district have written guidelines for post-exposure prophylaxis for HIV?	❒ Yes ❒ No ❒ Don't know/not sure
4. Does the district have written guidelines for post-exposure prophylaxis for hepatitis B?	❒ Yes ❒ No ❒ Don't know/not sure
5. Does the district have written guidelines for disposal or destruction of damaged and/or expired products?	❒ Yes ❒ No ❒ Don't know/not sure
6. Do any of the laboratory units within this district participate in a national quality assurance scheme?	❒ Yes ❒ No (go to Q. 8) ❒ Don't know/not sure (go to Q.8)
7. If yes, what percentage of laboratory units within the district currently participate in this scheme?	_____%
8. Are the documented national standard operating procedures (SOP) for tests performed by level available in this district?	❒ Yes ❒ No ❒ Don't know/not sure
9. Are the automated equipment for hematology, immunology, and chemistry standardized in this district? (*Specify for each.*)	

Comments:

III. Forecasting and Procurement

1. Are forecasts made for needed laboratory supplies (reagents and consumables) for all programs in the district?	❒ Yes ❒ No ❒ Don't know/not sure

2. List programs where forecasts are prepared, how often each forecast is prepared, the title of the person or division responsible, and the information used to forecast laboratory supply needs.

Program	Frequency	Title of Person Responsible	Information Used

3. List programs where forecasts are not prepared.

4. Describe the procurement process for the district. (*Specify any differences by program and/or donor.*)

5. Is a person or division responsible for:	
a. Procuring laboratory supplies and equipment? (*Specify by program.*)	
b. Monitoring the procurement process? (*Specify by program.*)	
c. Coordinating procurements across programs? (*specify*)	
6. Who is currently responsible for procuring laboratory supplies for each program?	
7. In general, are adequate amounts of all laboratory supplies received in an appropriate time frame? (*Specify any program differences.*)	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

IV. Financing

1. What are the sources of funds for laboratory services, including infrastructure, supplies, and equipment? What percentage of total funding is contributed by each source?	
a. Central level (MOH/MOF) budget allocation	_____ % of total funding
b. Local budget (region, district)	_____ % of total funding
c. User's fees/cost recovery	_____% of total funding
d. Donors (list by donor) Donor 1:_____ Donor 2:_____ Donor 3:_____	_____% of total funding _____% of total funding _____% of total funding
e. Other local budget (city council, municipality, etc.)	(*specify*)_____ _____% of total funding
2. Are sufficient funds available to cover the needed supplies and equipment? If not, what is the gap?	❒ Yes ❒ No (*specify amount*)_____ ❒ Don't know/not sure
3. Does a committee or division coordinate the different sources of funds?	❒ Yes (*specify*)_____ ❒ No ❒ Don't know/not sure
4. How are funds allocated to laboratory services in the district?	
5. Is there a separate line item for laboratory equipment maintenance and spare parts?	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

V. Storage and Distribution

1. Is there a district level store for laboratory supplies and equipment? (*Specify by program.*)	
2. Is the existing storage capacity adequate to handle the current quantities of laboratory products in this district?	❒ Yes ❒ No ❒ Don't know/not sure
3. Is the existing storage capacity adequate to handle expanded program goals for the next three years?	❒ Yes ❒ No ❒ Don't know/not sure
4. Is there an established distribution schedule for all laboratory facilities in this district?	❒ Yes ❒ No (go to Q.6) ❒ Don't know/not sure (go to Q.6)
5. If yes, describe the current system for distributing laboratory supplies and equipment to laboratories within the district. (*Specify any differences by program.*)	
6. Does the district have a sufficient number of functioning vehicles to distribute laboratories supplies and equipment?	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

VI. Inventory Control System

1. Do laboratories in this district have a set minimum stock level for reagents and consumables at which orders need to be placed?	❒ Yes ❒ No ❒ Don't know/not sure
2. Do laboratories in this district have a set maximum stock level for reagents and consumables above which the inventory level should not go?	❒ Yes ❒ No ❒ Don't know/not sure
3. Who determines how much to order?	❒ Laboratory ❒ Higher-level authorities ❒ Other (*specify*)_____
4. How often do laboratories order from the district store?	❒ Monthly ❒ Bi-monthly ❒ Quarterly ❒ Other (*specify*)_____
5. Are stock balances at all levels monitored regularly so that procurement decisions and actions can be made on time to avoid stockouts? (*Specify any program differences.*)	❒ Yes ❒ No ❒ Don't know/not sure
6. Does the higher/intermediate level need to reconstitute some stains so they are ready-to-use at the lower levels?	❒ Yes ❒ No ❒ Don't know/not sure
If yes to question 6, specify why: ❒ Lack of technical expertise ❒ Lack of weighing balances Other (*specify*)_____	

Comments:

VII. Laboratory Services Management Information System

1. Is there a laboratory services management information system in the district?	❒ Yes ❒ No ❒ Don't know/not sure
2. Are standard forms available and used to collect and report laboratory services management information?	❒ Yes ❒ No ❒ Don't know/not sure
3. Do the forms include the following data:	
a. Service statistics? (*specify*) _____ _____ _____	❒ Yes ❒ No ❒ Don't know/not sure
b. Logistics data? (*specify*) _____ _____ _____	❒ Yes ❒ No ❒ Don't know/not sure
c. Laboratory test requested and/or conducted?	❒ Yes ❒ No ❒ Don't know/not sure
d. Other data? (*specify*) _____ _____ _____	❒ Yes ❒ No ❒ Don't know/not sure
4. Is there any other system that collects any of the data items above?	❒ Yes (*Specify type of data and system.*) _____ ❒ No ❒ Don't know/not sure
5. Is there a reporting system for data collected?	❒ Yes ❒ No (go to Q.8) ❒ Don't know/not sure (go to Q.8)
6. Describe the reporting system, in detail, including the reporting level, the information reported, and the reporting frequency (monthly, bimonthly, quarterly).	

7. Is this system integrated with the MOH health information system?	❒ Yes ❒ No ❒ Don't know/not sure
8. Are the following data items for laboratory supplies (reagents and consumables) included in reports?	
a. Stock on hand?	❒ Yes ❒ No ❒ Don't know/not sure
b. Consumption (amount used)?	❒ Yes ❒ No ❒ Don't know/not sure
c. Losses and adjustments (stock damaged, lost, transferred, etc.)?	❒ Yes ❒ No ❒ Don't know/not sure
9. Approximately what percentage of the laboratories send these reports each reporting period according to the schedule?	_____% of laboratories ❒ Don't know/not sure
10. How do managers monitor reporting rates and follow-up to obtain missing reports?	
11. What decisions are based on information received in reports? ❒ Forecasting/quantification ❒ Procurement ❒ Transport/delivery	❒ Monitoring of stock balances ❒ Resupply quantities ❒ Other (*specify*) _____

Comments:

VIII. Supervision

1. Is scheduled laboratory supervision available at the following levels:	
a. District laboratories?	❒ Yes ❒ No
b. Health center laboratories?	❒ Yes ❒ No
c. Private sector laboratories?	❒ Yes ❒ No
2. How often are supervisory visits conducted?	
a. District laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
b. Health center laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
c. Private sector laboratories?	❒ Quarterly ❒ Every 6 months ❒ Annually ❒ Other (*specify*)_____
3. What activities are routinely done during the supervisory visit? Is there a standard supervision checklist or protocol? If yes, please provide a copy.	
4. Is there a mechanism to monitor the performance of the supply chain system for the laboratories in this district? If so, please describe.	

Comments:

IX. General Questions

1. What are the major areas of concern for laboratory services in this district?
2. How can these areas of concern be addressed in this district?

ATLAS—Facility Level

2005

Facility Level Questionnaire

General Information

1. Name of interviewer:		
2. Date:		
3. Name, qualification, and title of person being interviewed:		
4. Name of facility:		
5. District:		
6. Level of the facility:	❒ Regional Hospital ❒ District Hospital	❒ Health Center
7. Type of facility:	❒ Government ❒ Private not-for-profit ❒ Other (*specify*)_____	
8. Physical and postal address:		
9. Telephone:		
10. General notes:		

I. National Guidelines and Protocols

1. Are national guidelines and protocols for laboratory procedures available in this laboratory?	❒ Yes ❒ No ❒ Don't know/not sure
2. Are written guidelines on safety precautions available in this laboratory? *(Check all that apply.)*	❒ Infection prevention ❒ Safe disposal of sharps (i.e., needles, etc.) ❒ Safe disposal of biohazardous medical waste ❒ Use of protective gear ❒ Other (*specify*) _____ ❒ None available
3. Are written guidelines for post-exposure prophylaxis for HIV available in this laboratory?	❒ Yes ❒ No ❒ Don't know/not sure
4. Are written guidelines for post-exposure prophylaxis for hepatitis B available in this laboratory?	❒ Yes ❒ No ❒ Don't know/not sure
5. Are there written guidelines for disposal or destruction of damaged and/or expired products?	❒ Yes ❒ No ❒ Don't know/not sure
6. Are the national standard operating procedures (SOPs) available in this laboratory?	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

II. Laboratory Personnel

1. Current working staff by category:		
	Number	**Number who have attended refresher laboratory-related training course or workshop in the past 12 months**
Pathologist		
Laboratory Scientific Officer		
Laboratory Technologist		
Laboratory Technician		
Laboratory Assistants		
Laboratory Attendants		
Microscopists		
2. When did this laboratory receive the last supervisory visit?		❒ Never (go to section IV) ❒ Within the last month ❒ Within the last 3 months ❒ Within the last 6 months ❒ More than 6 months ago
3. Did the supervision focus on one program or multiple integrated programs?		❒ One ❒ Multiple ❒ Don't know/not sure
4. What programs were covered during the supervision? *(Check all that apply.)*		❒ Malaria ❒ STI ❒ HIV/AIDS ❒ TB ❒ None ❒ Other (*specify*)_____

5. What was done during the supervisory visit?	❒ Infrastructure inspected ❒ Equipment inspected ❒ Reinforcement of universal safety precautions ❒ Record keeping for performed tests checked ❒ Inventory of supplies checked ❒ Maintenance records checked ❒ Cold chain records checked ❒ Stock cards, stock ledgers, and/or reports checked ❒ Quality control ❒ On-the-job training/coaching ❒ Feedback to/from staff ❒ None of the above ❒ Other (*specify*)_____

Comments:

III. Laboratory Testing Services

In the second column, check the laboratory tests that are performed by the laboratory. If any test is done using non-standard techniques or if the test is not done, select the code from the list below, and write the code number in the third column.

1 = Not trained in the technique
2 = Equipment not available
3 = Reagent not available
4 = No adequate staff to perform the technique
5 = Equipment not working
6 = Other (*specify*)

1. Tests Performed at Health Center Laboratory		
Laboratory Test: Check if performed by laboratory	**Standard Technique: Check if performed by laboratory**	**Record reason(s) for not using the standard technique or for not doing the test**
❒ Hemoglobin estimation	❒ Oxyhemoglobin, lovibond comparator ❒ Cyanmethemoglobin, Sahli	
❒ Blood slide for haemoparasites	❒ Field stain	
❒ Stool microscopy for parasites	❒ Direct saline, iodine	
❒ Sputum for AFB	❒ ZN stain	
❒ Skin slit for AFB	❒ ZN stain	
❒ Urine sediment microscopy	❒ Direct microscopy	
❒ Urine protein, sugar	❒ Uristix	
❒ Syphilis screening	❒ RPR/VDRL carbon antigen	
❒ Sickle cell screen	❒ Sodium metabisulphite	
❒ Genito-urinary tract specimens	❒ Wet prep/ Gram stain/ KOH	
❒ Pus swabs	❒ Gram stain	
❒ Bubo aspirate (plague)	❒ Wayson staining	
❒ HIV screening	❒ Rapid screening kits	
❒ Blood grouping	❒ Tube method	
❒ Rhesus typing	❒ Tube	
❒ Total white cell count	❒ Manual, Hemocytometer using Turks fluid	
❒ Differential white cell count	❒ Manual, using stained thin film	
❒ Cerebrospinal fluid microscopy	❒ Gram/Leishman/Turks fluid	
❒ Cerebrospinal fluid chemistry	❒ Turbidimetric	

2. Additional Tests Performed at District Hospital Laboratory		
Laboratory Test: Check if performed by laboratory	**Standard Technique: Check if performed by laboratory**	**Record reason(s) for not using the standard technique or for not doing the test**
❒ Concentration technique ❒ Blood ❒ Stool	❒ Buffy coat (knotts) ❒ Formal ether	
❒ Urine qualitative chemistry (protein, sugar, ketones, blood bilirubin, urobilinogen)	❒ Uristix	
❒ Skin snip for microfilaria	❒ Saline direct	
❒ Collection and fixation of cytological smears	❒ Formalin	
❒ Collection and fixation of histological specimens	❒ Formalin	
3. Additional Tests Performed at the Regional Hospital Laboratory		
Laboratory Test: Check if performed by laboratory	**Standard Technique: Check if performed by laboratory**	**Record reason(s) for not using the standard technique or for not doing the test**
❒ Hemoglobin estimation	❒ Hematology analyzer	
❒ Total white cell count		
❒ Differential blood counts		
❒ Platelet count	❒ Hematology analyzer	
❒ Reticulocyte count		
❒ Blood indices		
❒ CD4/CD8 count	❒ Flow cytometer ❒ Non-cytofluorimetric ❒ Manual	
❒ Viral load	❒ HIV RNA ❒ Real Time PCR ❒ Heat Dissociated p24 antigen ❒ Cavidi RT	
❒ Sickle cell screening test	❒ Sodium metabisulphite	
❒ Blood slide examination for parasites	❒ Manual microscopy (field) ❒ Concentration	
❒ Film comment	❒ Manual microscopy-Romanosky	

❒ Stool microscopy	❒ Direct saline/ iodine concentration	
❒ HIV screening	❒ Rapid screening kits	
❒ Hb types	❒ Electrophoresis	
❒ Serum proteins	❒ Electrophoresis	
❒ Hepatitis B screening	❒ Rapid ELISA	
❒ Syphilis screening	❒ RPR/VDRL carbon antigen	
❒ Serum bilirubin	❒ Chemistry auto-analyzer(or Manual Photometer)	
❒ SGOT (serum)		
❒ SGPT (serum)		
❒ Alkaline phosphatase (serum)		
❒ Renal function tests		
❒ Blood glucose		
❒ Serum electrolytes		
❒ Total protein		
❒ Examination of CSF for yeast	❒ Negative staining-India ink	
❒ Examination of CSF, pus, deposit, etc., micro-organisms	❒ Gram stain	
❒ Culture	❒ Aerobic, ❒ Anaerobic ❒ CO2	
❒ Drug sensitivity	❒ Disc diffusion	
❒ Microscopy for plague	❒ Wayson staining	
❒ Processing biopsy	❒ Haematoxylin and eosin	
❒ Semen analysis	❒ Microscopy	
❒ Cytology	❒ Microscopy ❒ Pulp smear	
❒ Sputum for TB	❒ ZN stain	
❒ Urine sediment microscopy	❒ Direct microscopy	
❒ Urine chemistry	❒ Uristix	
❒ Genito-urinary track specimens	❒ Wet prep ❒ Gram ❒ KOH	
❒ Blood group, type and cross matching	❒ Tube method	

❒ Skin snip for microfilaria	❒ Saline direct	
❒ Examination for fungi	❒ KOH	
❒ Confirmatory test for syphilis	❒ TPHA	
❒ Routine screening of food handlers	❒ Standard public health methods	
❒ Bacteriological examination of water, foods, and beverages		
4. Are there documented SOPs for the tests performed at this facility?		❒ Yes ❒ No ❒ Don't know/not sure
5. Do the testing procedures at this laboratory follow the national SOPs?		❒ Yes ❒ No ❒ Don't know/not sure

Comments:

IV. Quality Assurance Tests

1. Are there written quality assurance policies and procedures available in this laboratory?	❒ Yes ❒ No ❒ Don't know/not sure
2. Does the laboratory undertake the following internal quality control procedures:	
a. Calibrate equipment daily, as indicated.	❒ Yes ❒ No ❒ Don't know/not sure
b. Check each batch of reagents using known positive and negative specimens?	❒ Yes ❒ No ❒ Don't know/not sure
c. Include commercially prepared controls whenever a batch of tests is run?	❒ Yes ❒ No ❒ Don't know/not sure
d. Countercheck test reports with another colleague before dispatch?	❒ Yes ❒ No ❒ Don't know/not sure
3. Does the laboratory participate in any external quality assurance scheme?	❒ Yes ❒ No ❒ Don't know/not sure
4. If yes, which scheme? _____ How often in a year? _____	
5. What percentage of supplies is needed for quality assurance?	

Comments:

V. Equipment Availability and Maintenance

Equipment List	Regional Hospital			District Hospital			Heath Center		
	Number expected*	Number available	Number functioning	Number expected	Number available	Number functioning	Number expected	Number available	Number functioning
Anaerobic jars									
Autoclave (fixed)									
Microtome disposable blade									
Automatic micro pipettes									
Automatic tissue processor									
Bunsen burner									
Chemistry auto analyzer or photometer									
Deep freezer (-20° C)									
Desktop computer and printer (office)									
Differential counter									
Electric digital balance									
Electrophoresis system									
ELISA reader and washer									

*If available, input this from the National Policy and Guidelines before the assessment.

Equipment List	Regional Hospital			District Hospital			Heath Center		
	Number expected	Number available	Number functioning	Number expected	Number available	Number functioning	Number expected	Number available	Number functioning
Flow cytometer CD4 or viral load instrument									
Hematology auto-analyzer									
Incubator (dry) ordinary									
Microtome									
PH meter									
Pipette washer									
Tally counter									
Tissue embedder									
Vacuum pump									
Voltage stabilizer									
Kerosene stove									
Binocular microscope (daylight)									
Binocular-powered microscope									
Blood bank refrigerator									
Laboratory refrigerator									
Portable autoclave (kerosene or charcoal)									
Portable autoclave (electric)									
Hemaglobinometer (Lovibond or Sahli)									
Bench top electric centrifuge									

Equipment List	Regional Hospital			District Hospital			Heath Center		
	Number expected	Number available	Number functioning	Number expected	Number available	Number functioning	Number expected	Number available	Number functioning
Haematocrit centrifuge									
Blood mixer									
Class II biosafety hood									
Haemocytometer (Neubauer)									
Hot air oven									
Steam sterilizer (pressure cooker)									
Manual centrifuge									
Spirit lamp									
Colorimeter (mains/12V)									
Weighing balance									
VDRL shaker									
Water still									
Water bath									
Water filter									
Thermometer (-20° C)									
Wire loop with holder									

1. Is the equipment in this laboratory standardized (similar to the equipment found in the same level laboratories), as recommended by the central level?	❒ Yes ❒ No ❒ Don't know/not sure

2. List the type and brand of equipment specifically used for:

Automated chemistry:_____

Automated hematology:_____

Automated immunology:_____

Comments:

Maintenance

1. Do you have a maintenance schedule for the equipment, other than daily cleaning?	❒ Yes ❒ No ❒ Don't know/not sure
2. Do you have a maintenance record?	❒ Yes ❒ No ❒ Don't know/not sure
3. In case of a breakdown, how are repairs handled?	
4. Do you routinely maintain records of refrigerator/freezer temperatures?	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

VI. Laboratory Supplies Logistics

A. Inventory Management

1. Does the laboratory have a set minimum stock level for reagents and consumables at which orders need to be placed?	❒ Yes ❒ No ❒ Don't know/not sure
2. Does the laboratory have a set maximum stock level for reagents and consumables above which the inventory level should not go?	❒ Yes ❒ No ❒ Don't know/not sure
3. Who determines how much to order?	❒ Laboratory ❒ Higher level authorities ❒ Other (*specify*) _____
If the general store (or pharmacy) of a hospital orders reagents, ask the hospital stores questions 4-8; if not skip to question 9.	
4. Which data elements do you use to calculate how much to order? DO NOT READ LIST. PROMPT "ANYTHING ELSE?" *(Check all that apply.)*	❒ Average monthly consumption ❒ Number of tests performed ❒ Stock remaining in the laboratory ❒ Set maximum stock level for reagents ❒ Other (*specify*) _____ ❒ Don't know/not sure
5. Where does this facility send its order for resupply? *(Check all that apply.)*	❒ National Medical Stores ❒ Regional Medical Stores ❒ District Medical Stores ❒ Private supplier/Open market ❒ Other (*specify*) _____
6. How often do you place orders?	❒ Monthly ❒ Quarterly ❒ Every 6 months ❒ Other (*specify*) _____
7. How many emergency orders have you placed in the last year?	Number: _____

8. Under normal circumstances, how long does it take from the time you place an order to the time the supplies are available for use?	_____ days ❒ Don't know/not sure
9. In the last year, did you have an order that took longer than usual to fill?	❒ Yes ❒ No (go to Q.12) ❒ Don't know/not sure (go to Q.12)
10. For this order, how long did it take you to receive your supplies from the time of order?	
11. What were the reasons for the delay in receiving the supplies?	
12. How often is a physical inventory of reagents and consumable supplies conducted in the laboratory?	Every _____ months
13. In your current system, do some stains need to be reconstituted at the regional or district level as ready-to-use for health centers?	❒ Yes (specify below) ❒ No ❒ Don't know/not sure
If yes to question 13, specify why: ❒ Lack of technical expertise ❒ Lack of weighing balances ❒ Other: (*specify*)_____ _____ _____	

Comments:

B. Logistics Management Information System

1. What type of forms does the laboratory use to keep track of reagents and consumables in stock? DO NOT READ LIST. PROMPT "ANYTHING ELSE?" *(Check all that apply and verify.)*	❒ Stock cards ❒ Ledgers ❒ Other (*specify*) _____ ❒ None
2. What type of forms does the laboratory use for ordering and receiving supplies? DO NOT READ LIST. PROMPT "ANYTHING ELSE?" *(Check all that apply and verify.)*	❒ Order book ❒ Delivery note ❒ Requisition/Issue voucher ❒ Other (*specify*) _____
3. How is the information from the forms used? DO NOT READ LIST. PROMPT "ANYTHING ELSE?" *(Check all that apply.)*	❒ Calculate use of supplies ❒ Calculate order quantities ❒ Report on use to the higher levels ❒ Other (*specify*) _____ ❒ Not used
4. Does the laboratory have standard printed test requests and reporting forms?	❒ Yes ❒ No ❒ Don't know/not sure
5. If no, what supports or forms are used for lab test requests and test results recording? (*specify*)	
6. Does this laboratory send reports on the following: (*Read list and check all positive responses.*)	❒ Stock status ❒ Lab tests performed ❒ Surveillance reports ❒ Other (*specify*) _____
7. How often are these reports sent?	❒ Monthly ❒ Bimonthly ❒ Quarterly ❒ Other (*specify*) _____

8. Where are these reports sent? (*Read list and check all positive responses.*)	❒ To the central laboratory coordinator ❒ To the regional laboratory coordinator ❒ To the district laboratory focal person ❒ Other (*specify*) _____
9. Is the logistics management information system integrated with the laboratory management information system?	❒ Yes ❒ No ❒ Don't know/not sure

Comments:

C. Transport

1. Do all of your laboratory supplies come from the same source? Is the distribution of laboratory supplies integrated across all programs or is it vertical?	❒ Fully integrated ❒ Partly integrated ❒ Vertical (go to Q.2)
a. Explain which program's products (e.g., HIV/AIDS, TB) are distributed together and which are distributed separately.	
2. How do lab supplies usually arrive at the laboratory? DO NOT READ LIST. Specify any differences for vertical programs (e.g., HIV/AIDS, TB).	❒ Laboratory picks them up ❒ Higher level (e.g., district, regional) delivers them ❒ National Medical Store delivers them ❒ Private supplier delivers them ❒ Other (*specify*) _____
3. Does the facility have a vehicle to pick up the supplies?	❒ Yes ❒ No
4. Does the facility have the funds for fuel to pick up the supplies?	❒ Yes ❒ No
5. What are the major problems you have experienced related to transport in the last year?	a. _____ b. _____ c. _____

Comments:

D. Input for System Design

1. How often do you think you should reorder your supplies to ensure an adequate stock at all times?	❒ Monthly ❒ Bimonthly ❒ Quarterly ❒ Other (*specify*) _____
2. What would be the best way to get supplies to your lab?	❒ Your facility picks them up ❒ Higher level delivers them ❒ Other (*specify*) _____
3. What would be the best way to track usage of reagents that are not quantifiable per whole unit-test?	

Comments:

E. Availability of Sample Reagents and Infection Control Commodities

Health Center Laboratory			
Sample Reagents	**Units**	**Stockout on day of the visit (Yes/No)**	**Stockout in the last 30 days (Yes/No)**
Field stain A	1 liter		
Field stain B	1 liter		
Gram stain	1 liter		
ZN stain	1 liter		
Sodium chloride	1 gram		
RPR antigen	1 test		
Immersion oil	1 ml		
Uristix	1 strip/bottle		
Methanol	1 liter		
Xylene	1 liter		
HIV test kit (Determine)	1 test		
HIV test kit (Uni-Gold^{TM})	1 test		
Blood group/type antisera	1 kit		
Acetic acid, glacial	1 ml		
Continue if District Laboratory			
Sample Reagents	**Units**	**Stockout on day of the visit (Yes/No)**	**Stockout in the last 30 days (Yes/No)**
Field stain A reagent	1 gram		
Field stain B reagent	1 gram		
Gram stain reagent	1 gram		
ZN stain reagent	1 gram		
Sodium chloride reagent	1 gram		
Formalin, solution	1 liter		
Ether	1 liter		
India ink	1 ml		
Potassium hydroxide, reagent	1 gram		
Pregnancy test kit	1 test		

Continue if Regional Laboratory			
Sample Reagents	**Units**	**Stockout on day of the visit (Yes/No)**	**Stockout in the last 30 days (Yes/No)**
HIV test kit (Determine)	1 test		
HIV test kit (Uni-Gold™)	1 test		
Viral load reagents	1 kit		
CD4 test reagents	1 kit		
RPR/VDRL kit	1 test		
Hepatitis screening kit	1 test		
Chemistry autoanalyser reagent kit, glucose	1 test		
Chemistry autoanalyser reagent kit, creatine	1 test		
Chemistry autoanalyser reagent kit, GOT (AST)	1 test		
Hematology autoanalyser reagent kit	1 test		
India ink	1 ml		
Gram stain reagent, crystal violet	1 liter		
Gram stain reagent, iodine	1 liter		
Gram stain reagent, alcohol	1 liter		
Gram stain reagent, safranin	1 liter		
ZN Kinyoun stain	1 liter		
ZN acid-alcohol solution	1 liter		
Culture media			
a. Blood agar	1 bottle		
b. Mc Conkey	1 bottle		
c. Muller Hinton	1 bottle		
d. Powder Hb	1 bottle		
e. TSI (Triple Sugar Iron Agar)	1 bottle		
Oxidase reagents	1 gram		
Typing antisera	1 ml		
Sensitivity antibiotic discs	1 ampoule		
Methanol	1 liter		
Xylene	1 liter		
Immersion oil	1 ml		
Disinfectant	1 liter		

What laboratory supplies have been most frequently stocked out and for the longest period of time during the past year? List up to five supplies, including frequency and duration.

Infection Control Commodiites

Commodities	Unit	Average Quarterly Use	Quantities Available
Hand soap	1 bar of soap		
Unused sharps boxes	1 box		
Gloves	1 pair		
Waste receptacle	1 receptacle		
Goggles	1 goggles		
Mask	1 mask		
Apron (plastic)	1 apron		
Laboratory coats	1 coat		

Does the mechanism for obtaining these supplies differ from other laboratory supplies? (*specify*)

Comments:

Storage

Inspect the storage area of the laboratory for questions 1–5. Write the relevant comments in the space provided.		
Storage Conditions	**Yes/No/ DK**	**Comments**
1. Written guidelines for storing laboratory supplies according to their specifications (flammable, caustic, etc.) exist. (*Are Material Safety Data Sheets available?*)		
2. Flammable and hazardous chemicals are stored in specialized storage areas.		
3. Reagents are stored according to the first-to-expire, first-out practice in the laboratory.		
For questions 4–6, if no damaged or expired products are evident, ask the stock keeper to explain the accepted practice for such products. Verify the practice to the extent possible.		
4. The laboratory makes it a practice to separate damaged and/or expired supplies from good products.		
5. The laboratory makes it a practice to remove damaged and/or expired supplies from inventory.		
6. The laboratory makes it a practice to follow guidelines for disposal and/or destruction of damaged and/or expired laboratory supplies.		
7. Cold chain items are always stored at appropriate temperatures. If not, list items and how they were found.		
8. Have there been any problems with storing laboratory supplies?	❒ Yes ❒ No	
9. If yes, list the three major problems with storing laboratory supplies? *(Start with the highest priority.)*	1. _____ 2. _____ 3. _____	

Comments:

VII. Laboratory Infrastructure

In first column, list any additional rooms in the laboratory. Possible type of rooms includes hematology, clinical chemistry, blood transfusion, microbiology, parasitology, histopathology, and general laboratory area.

If you have two rooms of the same type, add each room's floor area measurement together and write in the total floor area. Do the same for the window areas.

Laboratory Space and Window Area (in square meters)						
Type of Room	**Regional Hospital**		**District Hospital**		**Heath Center**	
	Floor	Window	Floor	Window	Floor	Window
Main lab room						
Blood donation room						
Sluice						
Store						
Office for head of laboratory						
Reception/ specimen collection area						

Interviewer's Guide to Inspecting the Laboratory Area

If the answer for any of the questions is no, describe the status of the area in the comments box.

- Question 10—Note that the incinerator should be functioning and used to destroy all hazardous waste.
- Identify any areas in need of improvement and the type of improvement needed and note in the comments box.

Laboratory Area	Yes	No	Comments
1. Laboratory area is maintained in good condition (e.g., clean, all trash removed, shelves are sturdy, etc).			
2. Laboratory is secured with a lock and key but is accessible during normal working hours.			
3. Laboratory has shelves and lockable cupboards; access is limited to authorized personnel.			
4. Laboratory has sufficient space to adequately store existing supplies.			
5. Laboratory has:			
a. Running water			
b. Access to filtered rainwater **(for HC only)**			
6. Laboratory has a consistent power supply and/or a generator with a guaranteed supply of petrol or solar power.			(Record average number of hours per day electric power is available.)
7. Laboratory has an adequate number of power points (sockets).			
8. Laboratory has separate sinks for washing laboratory ware and staining, and for washing hands after being exposed to infected materials.			
9. Laboratory has drainage from laboratory sinks that are closed and that lead to either a septic tank or deep pit.			
10. Laboratory has a **functioning** incinerator or other nationally acceptable waste management (e.g., a protected pit) to correctly dispose of all hazardous waste (e.g., needles, toxic materials) and fuel for the incinerator (if applicable).			
11. Laboratory floors are in good condition without the need for repair.			
12. At all times, roof is maintained in good condition to avoid sunlight and water penetration.			
13. Internal walls are in good condition without the need for repair.			
14. External walls are in good condition without the need for repair.			
15. Laboratory is well lit.			
16. Laboratory is well ventilated and cross-ventilated.			

Laboratory Area	Yes	No	Comments
17. Windows and doors are in good condition without the need for replacement or repair.			
18. Laboratory has firm built-in benches with leveled tops in good condition.			
19. Laboratory has firm shelves to store supplies and reagents.			
20. There is adequate glassware and/or plastic ware.			
21. Distilled/deionized water is available.			
22. Windows have security bars.			
23. There is an adequate number of laboratory stools.			
24. The laboratory has an indoor patient waiting area with seats.			
25. Lab staff have access to clean toilet facilities.			
26. Lab staff have access to safe drinking water supply.			
27. Laboratory has a working fire extinguisher.			

Comments:

END OF QUESTIONNAIRE

References

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Ministry of Health (MOH), and Uganda and African Medical Research Foundation (AMREF). 1994. *National Policy Guidelines for the Health Laboratory Services of Uganda.* Kampala, Uganda: MOH, Uganda, and AMREF.

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